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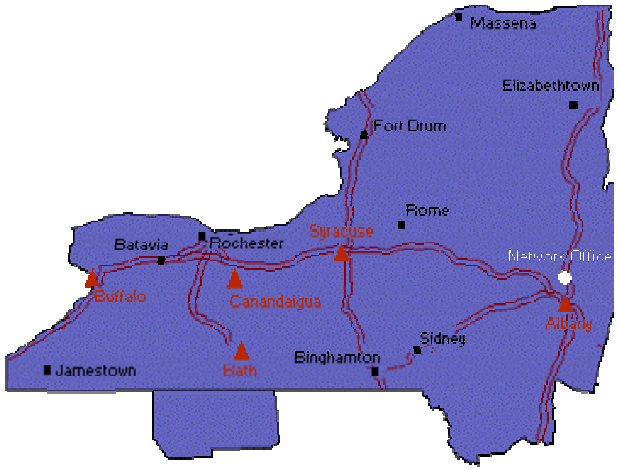
Please visit our websites at

Internet:
http://www.va.gov/visns/visn02/

Intranet:
http://vaww.visn2.med.va.gov/

VISN 2

Laboratory Expert System



VA Healthcare Network Upstate New York

The Laboratory Expert System (LES) is an example of Artificial Intelligence implemented in the form of an expert system. The LES takes the expertise of clinical experts and implements their decision making skills as a computer program. These decisions are made using data obtained from the VistA information system.

The VA Healthcare Network Upstate New York has implemented a computer assisted expert system, with the intent of decreasing the occurrence of inappropriately ordered laboratory tests, thereby eliminating their associated costs. Historically, laboratorians have spent considerable time and expense in monitoring over-utilization of laboratory tests. The denial of these inappropriate tests was a manual procedure which included phone calls, memoranda and manual deletion of orders that had been placed into the hospital computer system. The LES has the intent of automatically decreasing over-utilized or inappropriate laboratory orders, eliminating their associated costs, and removing the burden of test denial from the laboratory. LES is a set of subroutines that operate transparent to the user.

The LES package functions interactively through the VistA Laboratory v5.2, OE/RR v2.5 and CPRS v1.0 packages. The LES package has an educational component that displays the previous test results that contributed to the LES decision along with informational statements explaining why the test is being denied. The informational statements also offer an alternate ordering pathway if the test is clinically necessary.

The diagram shown below demonstrates the flow from the VistA CPRS package into the Laboratory Expert System. The LES package denies the identified inappropriate orders according to pre-approved clinically acceptable logical algorithms. The diagram below illustrates the extreme flexibility of the LES logic as demonstrated by the Lupus-Like Anticoagulant logic.

Documentation for the Laboratory Expert System can be obtained from the VISN 2 WWW site at http://vaww.visn2.med.va.gov/visn2 and can be found on the Syracuse Medical Center page.

Contact Ron Schmidt, Marty Trey or Cheryl Latham for further information.